Appendix D

Academic Area Framework Crosswalks to Cross-Content Workplace Readiness Standards

To help prepare students for a rapidly changing world, the New Jersey State Board of Education adopted five Cross-Content Workplace Readiness Standards to be integrated within the seven academic content areas. These standards define the skills students need as they pursue higher education, careers, and responsibilities as adult citizens. Educators are charged to integrate these concepts into all programs in content-specific and developmentally appropriate ways.

In order to bring the standards and indicators to life in the context of the classroom, frameworks were developed in each of the seven content areas. These frameworks are a resource for local educators as they develop district curriculum and instructional plans. The framework provides activities and vignettes as well as the educational rationale for them.

To strengthen the linkages between each content area and the Cross-Content Workplace Readiness Standards, framework activities and scenarios have been designed to include interdisciplinary approaches to workplace readiness. The interdisciplinary approach combines several content disciplines and workplace readiness in a common activity that helps students recognize the relationships that exist between the disciplines. In addition, the use of a systems approach allows educators to develop an overview perspective. The result is a highly motivating and engaging framework for learning.

The following sample activities *were taken directly from the academic content area frameworks.* They illustrate the infusion of Cross-Content Workplace Readiness standards and indicators *as they appear in those frameworks.*

Visual and Performing Arts

Standard 1.6
Visual Arts: All students will develop design skills for planning the form and function of space, structures, objects, sound, and events.

Cumulative Progress Indicator 2: Plan and execute solutions to design problems.

Grade Levels: K to 4

Activity: ***Box Cars***

Students will design a vehicle. Consider the varied uses of vehicles, such as automobiles, boats (all kinds), buses, planes, trains, trucks, futuristic vehicles, etc. They also discuss bumper cars, all-terrain vehicles, rafts, hot air balloons, etc. Bring in model or toy vehicles to display. Students learn that "Form follows function" so they must decide:

- What will their vehicle be used for?
- Who and how many will use it? How old are they?
- What does the vehicle need?
- What will make it safe? (Develop through discussion.)
- How will the exterior be designed?

Students select from a variety of boxes, such as shoe boxes, cereal boxes, egg cartons, and appliance cartons (for group project). They also select from various media.

Workplace Readiness Skills: 3.1/3.8/3.12/3.15/5.1/5.6/5.7/5.8

Comprehensive Health and Physical Education

Standard 2.3: All students will learn the physical, mental, emotional, and social effects of the use and abuse of alcohol, tobacco, and other drugs.

Indicator 2.3-15: Analyze the short and long-term effects of chemical use, abuse, and dependency on the body, behavior, work and school performance, and personal relationships

Grade Levels: 9-12

Teacher Tip: For the next activity use local companies that employ students (e.g., in cooperative employment experiences, internships, mentorship programs).

Activity H: ***On the Job***
Students interview individuals employed in various occupations to determine how alcohol, tobacco, and other drugs might interfere with job performance. Find out if the individuals are aware of employee assistance programs or benefits from their health insurance companies that support treatment for chemical dependency.

Variation: Invite former students to discuss issues and problems associated with substance use in college, on the job, or the military.

Variation: Divide the class into small groups. Each group selects a different type of business (e.g., construction, computers, healthcare) and develops substance abuse policies for the company. Groups share their ideas and discuss them with a human resources director from a local company.

Workplace Readiness Skills: 1.2/1.3/1.11/5.1

Language Arts Literacy

Standard 3.4: All students will read a variety of materials and texts with comprehension and critical analysis.

Cumulative Progress Indicator 21: Analyze text using patterns of organization, such as cause and effect, comparison and contrast.

Grade Level: Middle School

Activity: Students examine various text types that demonstrate patterns of cause/effect, comparison/contrast, persuasive/argumentative, etc. Then, using an overhead projector, the teacher shows partially completed graphic organizers that match the text types examined and asks the students to complete the organizers. Next, students examine unfamiliar texts and construct the ideas in an organizer of their own choice. After completing the organizer, they write a narrative explaining the process they used for this activity.

Workplace Readiness Skills: 3.7/3.8

Mathematics

The First Four Standards—Grades K–2
Vignette—Will a Dinosaur Fit?

Standards: **In addition to the First Four Standards, this vignette highlights Standards 6 (Number Sense), 7 (Geometry), 9 (Measurement), and 11 (Estimation).**

The problem: The second grade was in the midst of a unit on dinosaurs when the teacher read to her class the book *Danny and the Dinosaur* by Syd Hoff (Harper & Row, 1958). After the first reading, the children re-examined some of the illustrations. One picture depicted the dinosaur larger than a block of homes, another showed the dinosaur almost completely hidden by one house. One picture showed the dinosaur taller than an apartment building and yet another showed the dinosaur not quite as tall as a lamp post. Students were intrigued by the idea that Danny's dinosaur friend did not seem to be of a consistent size. They voiced opinions about the dinosaur's actual size. Since students seemed to have a sustained interest in exploring the sizes of dinosaurs, the teacher presented students with this question: *Do you think that a dinosaur could fit into our classroom?*

The discussion: Brainstorming was encouraged by the teacher as questions such as the following were posed by students and by the teacher. *What does it mean to "fit" in the classroom? What information would we need to get in order to determine if a dinosaur could fit in our classroom? Do you think all of our answers will be the same? Why? What do we know already that might help us? What materials do you think we would need?*

Solving the problem: Students worked in groups of 3 over a period of several days. They began by choosing a specific dinosaur and then they used a variety of books and computer software in the classroom to find the size of their dinosaur. They determined the size of the classroom, choosing to measure with a trundle wheel or a tape, or by using estimation. Then they decided, by comparing the measures found in books with those made of the classroom, whether the dinosaur would fit into the classroom. Each group was responsible for creating a display and making a presentation to the class to answer the question. The displays made use of models, pictures, and text. Students with more than a few sentences to write were encouraged to make use of the word processor available in the classroom.

Summary: Students used their displays to make presentations to the class. There were a variety of answers. Those who had chosen one of the smaller dinosaurs, the velociraptors, for example, found that the dinosaur could walk through the doorway and several dinosaurs would fit in the room. Others, who had chosen larger dinosaurs, the stegosaurus, for example, found that if the dinosaur could have gotten through the doorway, several would have fit in the room. Still others, who had chosen very large dinosaurs, the brachiosaurus, for example, found that the dinosaur would not have fit into the room at all. As the presentations ended, several children suggested further explorations that might be interesting: *Would the dinosaur I chose fit into the multipurpose room? Was the dinosaur I chose as long as the driveway in front of the school? Was the dinosaur I chose taller than the school building?*

Workplace Readiness Skills: 3.1/3.2/3.3/3.4/3.5/4.2

Science

Standard 9: All students will gain an understanding of natural laws as they apply to motion, forces, and energy transformations.

Indicator 13: Explain that the sun is a major source of the earth's energy and that energy is emitted in various forms, including visible light, infrared, and ultraviolet radiation.

Grade Levels: 7–8

Learning Activity: ***Energy Conservation***

Students brainstorm ideas for reducing their dependence on nonrenewable energy sources (e.g., use less, conserve, or change to a renewable source). Selecting from the best brainstorming ideas, students will engage in technology by designing and making/modeling items for an improved energy utilization in their school, home, or community.

For example they can

- Design solar heaters or ovens
- Reduce air infiltration
- Plan for carpooling
- Suggest a sweater/sweatshirt day and lower building temperatures
- Develop a system to reduce unnecessary lighting
- Design a new line of clothing
- Develop a system that automatically turns off lighting in unoccupied rooms

Workplace Readiness Skills: 2.1/2.9/3.15

Social Studies

Standard 6.5.: All students will acquire historical understanding of varying cultures throughout the history of New Jersey, the United States and the world.

Indicator 18: Evaluate the mutual influence of technology and culture.
Science and technology have a profound effect on the attitudes, values and "world views" of cultural groups. Conversely, cultural groups define the uses of science and new technologies. This indicator asks students to explore the dynamic between science and culture.

Grade Levels: 9-12

The Cultural Impact of Scientific Revolutions

Historical Period(s): The Age of Global Encounters (to 1700)
The Age of Revolutions (to 1850)
The Age of Imperialism and World War (to 1950)
The Modern World

Historical Theme: The History of Social Thought

Overview
Science and technology have a major impact on culture, as can be seen by studying the progression of scientific thought from Galileo to Isaac Newton to Albert Einstein. Coupled with the ideas of "paradigm shift" (Thomas Kuhn) and the problem of the gap between the scientific and popular cultures (C.P. Snow), such study will introduce students to how science and technology have changed the culture in which we live.

Cosmologies. Provide students with selected readings on the general world-view at the time of Copernicus. Why did people in general believe the earth was the center of the universe? How was this belief related to religious convictions? If the earth is not the center of things, what does this say about man and his place in the universe? If man is not the center, then what is his/her appropriate place in the cosmos? Students can begin to develop explanations of why European cultures were slow to replace the geocentric theory with the heliocentric theory in response to the findings of Galileo in the 16th century.

Literary version. Students read literary versions of the story of Galileo, especially the play by Bertolt Brecht. What are the issues of conscience in this play? When should religious conviction over-rule scientific discovery? These are difficult and complex issues for students to consider. The teacher should be sensitive to religious convictions of students in any such consideration. Teach the conflicts but pro-

vide students with a model of the ability to consider alternate viewpoints and explanations for complex phenomena.

Newton and Einstein. Our world view is based in most cases on what science has discovered about space, time, matter, energy and other matters of import. This world view also effects our everyday lives and thoughts and beliefs about many things. Teachers can explain how the work of Issac Newton in the 17th century and Albert Einstein's work in the 20th century laid the groundwork for such significant developments as atomic energy and television, and the impact of these developments on culture. Ask students to use the encyclopedia in the school library or to consult HYPERLINK http://www.encyclopedia.com to study the life and times of both Newton and Einstein.

- How did their discoveries change the world view at the time?
- What did the laws of gravity mean to the people of Newton's time, the 17th century?
- Did people begin to develop a more mechanistic view of the universe?
- How did Einstein's discoveries affect the thinking and cultures of the 20th century?

Metatheories. Students are ready now to begin to consider the impact of science on culture in a broader context. Provide reading selections from Kuhn's *The Structure of Scientific Revolutions* and Snow's *The Two Cultures*. Have students do book reviews on their reading, to be presented to the class for general discussion and critique.

The following are basic understandings for students while studying the impact of science and technology on civilizations:

- Change is a basic mechanism for the growth of civilizations.
- Such change comes from either science or art.
- There can be great resistance to change if basic views and assumptions are challenged.
- People who educate the community to accept salutary changes are frequently rejected in their own time and honored later.
- Some proposed changes are good; some are not.
- It is our individual responsibility to be able to determine the difference. This is a major role for education in everyone's life.

Students begin to list and discuss changes that have happened in their lifetimes. Each student selects a good change and does some research to be able to describe the change and its effects on the culture.

Further Exploration

There are a number of possibilities for extension of this unit. Students can illustrate heliocentric and geocentric theories in a pair of three-dimensional displays; they can survey the number of hours students watch television and relate the findings to Einstein's work on photoelectricity; and they can prepare a chart showing all of the ways that knowledge of atoms and their structures affects daily life.

Connections
The above activities allow students to compare customs of societies over time (Standard 6.4, Indicator 6) and to analyze how cultural and scientific institutions function either to maintain continuity or to promote change.

Resources
Kuhn, Thomas S. *The Structure of Scientific Revolutions.* Revised Edition. Chicago: University of Chicago Press, 1970.

Jacob, Margaret C. *The Cultural Meaning of the Scientific Revolution.* Philadelphia: Temple University Press, 1988.

Snow, C.P. *Two Cultures: and a Second Look. Second Edition.* New York: New American Library, 1964.

Laughton, Chas. (translator) *Galileo* by Bertolt Brecht. New York: Grove Press, 1991.

Workplace Readiness Skills: 2.10/3.3/3.4/3.5/3.8/3.9

World Languages

Standard 7.1: All students will be able to communicate at a basic literacy level in at least one language other than English.

Standard 7.2: All students will be able to demonstrate an understanding of the interrelationship between language and culture for at least one world language in addition to English.

Cumulative Progress Indicators:

7.1.1 Respond to and initiate simple statements and commands such as greetings, introductions, and leave-takings.
7.1.4 Describe people places things and events using short phrases and simple sentences.
7.1.5 Provide and obtain information on familiar topics.
7.2.1 Demonstrate an awareness of culture.
7.2.2 Demonstrate knowledge of the cultures of speakers of the language studied.

Grade Levels: K to 2

Activity: ***Come Home With Me***

Activity Overview: By constructing model homes that are found in the target culture, students learn about a tangible cultural product through a hands-on classroom experience. Language is used in a meaningful way as students discover the similarities and differences between their own homes and dwellings in the target culture.

Resources and Materials: Clay, play dough, building blocks, construction paper, craft sticks, poster board, brown manila paper, tissue and crepe paper, recycled materials in a variety of shapes and sizes, and library media center.

Assessment:

- Formative: Monitor students' use of the target language during classroom activities with a checklist rubric.
- Summative: Evaluate students' drawings for clarity and completeness. Evaluate oral presentations for comprehensibility and accuracy using an oral language rating scale. Tape students' model-home presentations, and include audiocassettes in students' portfolios with their drawings.

Steps for Planning and Implementation:

1. With assistance from the library media specialist, students use available resources to locate pictures of typical target-culture dwellings.
2. Enlarge the pictures and display them around the room. Place pictures of houses and apartment buildings found in the students' communities next to the pictures of the target-culture dwellings.
3. Introduce vocabulary about dwellings using a variety of techniques, including puppets.
4. Students work on paired activities designed to review weather expressions and vocabulary about the environment that influence the type of home typically built in the target culture.
5. Elicit responses from students about the similarities and differences between target-culture dwellings and dwellings in their own community. Graph the responses on a T-chart.
6. Read a story in the target language on the theme of homes.
7. Students draw a picture of the outsides of their houses (or apartments), or bring in a photo of their homes.
8. Students make simple oral presentations to the class about their houses/apartments. Record the presentations on audiocassettes. Display the drawing(s) or photo(s) on a bulletin board with a label indicating whose dwellings they are.
9. Along with the art specialist, help the students make a model of dwellings in the target culture. Encourage students to use the target language during this phase of the activity by walking around the room and asking students simple questions about their projects.
10. Invite parents to visit when the students present their model homes to the class. Students prepare simple foods from the target culture, which they serve to guests and friends.
11. Display the students' models of homes in the school and in appropriate community sites.

Extension Activities:

- Using guided questions, students write paragraphs to accompany their model dwellings.
- Students sing songs and/or play games from the target culture on the theme of homes.
- Students create a model of a town in the target culture.

Interdisciplinary Connections:

- ***Visual and Performing Arts:*** 1.5.3: Apply knowledge of historical, social, and cultural influences to understanding a work of art. 1.6.2: Plan and execute solutions to design problems.
- ***Language Arts:*** 3.1.1: Use listening, writing, reading, and viewing to assist with speaking. 3.2.1: Use speaking, writing, reading, and viewing to assist with listening.
- ***Science:*** 5.10.4: Collect and record weather data to identify existing weather conditions, and recognize how those conditions affect our daily lives.
- ***Social Studies:*** 6.8.2: Discuss the similarities, differences, and interdependencies among rural, suburban, and urban communities. 6.8.5: Compare the physical characteristics of places and regions.
- ***Library Information Skills:*** Locate, select, retrieve, and assess a variety of print, CD-ROM, and online materials.

Workplace Readiness Skills: 2.6/2.8/3.4/3.5/3.15/4.2